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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,184	02/14/2001	Arlie R. Conner	1266-030	7800
32692	7590	08/20/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			NGUYEN, HOAN C	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	
			2871	

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/681,184

Applicant(s)

CONNER ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 2/17/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 6-10, 13, 14, 26-28, 31, 32 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-12, 15-25, 29-30, 33-35 and 37-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's arguments with respect to Amended claims 1, 3, 4, 11, 16, 18,19, 21, 22, 26, 33, 35 and 37-39 based on the amendment filed on 17 February 2004 have been considered but are moot in view of the same ground(s) of rejection (with same structure can have different intended uses). Therefore, this is Final action.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-2, 11-15, 19-20, 29-30, 33-35 and 36-39 are rejected under 35

U.S.C. 102(e) as being anticipated by Smith (US6280037B1).

In regard to claims 1, 19, 33 and 39, Smith teaches (Figs. 4-6) a color display system comprising:

- an illumination system 63 that provides fixed, color-separated illumination of color-component sub-pixels in a pixellated electronic display panel (display panels 60a, 60b and 60c);

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- a post-display panel dynamic displacement element (piezoelectric actuators 62) that is configured and arranged to repeatedly displace alignment of the color-component sub-pixels 46 generated by the pixellated electronic display panel through a sequence of positions during operating of system;

(claims 2, 20 and 34)

- a color separating system with plural angularly inclined dichroic mirrors 54a-b for providing the color separation of incident multi-color illumination light;

(claims 13-14)

- a prism array the light redirecting means 44) positioned after the color separating element (claims 13-14);

wherein

(claims 11-12 and 29-30)

- the post-display panel dynamic displacement element includes a pair of face-to-face refractive elements (prism arrays 52) with a separation between them that is modified to successively direct the color-component sub-pixels generated by the display panel along different optical paths.

(claims 37-38)

- the display panel includes color component sub-pixels that are arranged in vertical columns for each color component and panel in adjacent rows and after the display element includes displacing selected color components in lateral and transverse directions as shown in Figs. 5-6.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-7, 16-17 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US6280037B1) as applied to claims 1-2, 11-15, 19-20, 29-30, 33-35 and 39 above, in view of Steiner et al. (US5748828A).

Smith fails to disclose the features of claims 3-7, 16-17 and 21-25.

Steiner et al. teach (Figs. 3) a color display system comprising further (claims 3, 16-17 and 21)

- a microlens array (collimation structure 22) positioned adjacent the pixellated electronic display for collimating light; It is also conventional that microlens can replace lens as Smith disclosed for collimating light; wherein the each microlens is aligned with and delivers light to a triplet of color-component sub-pixels that are arranged in a horizontal row (Fig. 2a) the display panel includes color component sub-pixels that are arranged in vertical columns for each color component and successive sub-pixels in each column are positioned in alternate successive rows (Fig. 2a).

(claims 4-7 and 22-25)

- a grating (color separating optical element 40) positioned between the microlens array and the pixellated electronic display, wherein the grating with

holographic optical elements include holographic grating for conventionally displaying the 3-dimensional images (col. 5 lines 29-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a color system as Smith disclosed with a micro-lens array for collimating light and holographic grating for displaying the 3-dimensional images with reducing power as taught by Steiner et al. (col. 3 lines 29-41)

3. Claims 18 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US6280037B1) as applied to claims 1-2, 11-15, 19-20, 29-30, 33-35 and 39 above, in view of Shirochi (US5872654A).

Smith fails to disclose the features of claims 18 and 37-38.

Shirochi teaches (Fig. 2-3) a color display system further comprising a microlens (prism 31) array positioned adjacent the display panel, wherein the each microlens is aligned with and delivers light to a triplet of color-component sub-pixels that are positioned among two adjacent horizontal rows for diffusing more than three color pixels.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a color system as Smith disclosed with a microlens (prism 31) array positioned adjacent the display panel, wherein the each microlens is aligned with and delivers light to a triplet of color-component sub-pixels that are positioned among two adjacent horizontal rows for diffusing more than three color pixels as taught by Shirochi (col. 2 lines 34-37).

***Response to Arguments***

Applicant's arguments filed on Feb. 17, 2004 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

Smith does not disclose a dynamic alignment of sub-pixels repeatedly through a sequence of positions. There is no repeated cycling through a sequence of positions in Smith.

Examiner's responses to Applicants' ONLY arguments are follows:

Smith discloses a dynamic alignment of sub-pixels repeatedly through a sequence of positions until the images are superimposed. There is also no repeated cycling through a sequence of positions disclosed in specification and claims; therefore, this argument is irrelevant.

However, one structural device (Fig. 4) can have **inherently different intended uses or different applications**. Smith discloses only the use of superimposing the image. The same structure (Fig. 4) can be inherently used to repeated cycling through a sequence of positions (Figs. 5-6 and 11) wherein the color may vary across the pixel.

Moreover, Smith discloses (Fig. 5) the translational movement of one or more display panels 60 being used to cause the beam images 63 and 65 to converge. Therefore, the same structure (Fig. 4) can be inherently used to repeated cycling through a sequence of positions.

Furthermore, Smith discloses (Fig. 7) coarse or global alignment being performed by remapping pixels of one or more display panels 60. Therefore, the same

structure (Fig. 4) can be inherently used to repeated cycling through a sequence of positions.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN  
Examiner  
Art Unit 2871

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TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER